



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/562,124

12/23/2005

Kenichi Fukuoka

28955.1070

6278

27890 7590 01/18/2011  
STEPTOE & JOHNSON LLP  
1330 CONNECTICUT AVENUE, N.W.  
WASHINGTON, DC 20036

EXAMINER

WILSON, MICHAEL H

ART UNIT

PAPER NUMBER

1786

MAIL DATE

DELIVERY MODE

01/18/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/562,124	<b>Applicant(s)</b> FUKUOKA ET AL.	
	<b>Examiner</b> MICHAEL H. WILSON	<b>Art Unit</b> 1786	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2010 and 30 December 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,28,33,34 and 39-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,28,33,34 and 39-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3 December 2010 has been entered.

### ***Response to Amendment***

2. This Office action is in response to Applicant's amendments filed 3 December 2010 and 30 December 2010, which cancels claim 38, amends claim 1, and adds new claims 40-42.

Claims 1, 28, 33, 34, and 39-42 are pending.

3. Applicants overcame the rejection of claims 1, 28, and 39 under 35 U.S.C. 102(e) as being anticipated by Kido et al. (US 2003/0189401 A1) by amending the claims in the reply filed 3 December 2010.

4. Applicants overcame the rejection of claims 1, 28, 33, 34, and 38 under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (US 6,107,734) in view of Mori (US 6,215,245 B1) and Tsutsui et al. (US 2003/0127967 A1) by amending or canceling the claims in the reply filed 30 December 2010.

5. Applicants overcame the rejection of claim 39 under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (US 6,107,734) in view of Mori (US 6,215,245 B1) and Tsutsui et al. (US 2003/0127967 A1) and further in view of Liao et al. (US 2004/0227460 A1) by amending the claim in the reply filed 30 December 2010.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1, 28, 33, 34, and 39-41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 1, the claim recites an acceptor to donor ratio however does not set forth what property the ratio is describing. The specification supports the ratio by weight but does not have support for by volume or by mole. Therefore the general recitation of the ratio without specifying the measurement does not appear to be supported by the original disclosure because it is **broader** than what was originally disclosed.. A suggested correction is to add --by weight-- to the end of claim 1.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 1786

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1, 28, 33, 34, and 39-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the claim is indefinite because it is unknown what is being compared by the ratio in the present claim. While the claim specifies the ratio is between donor and acceptor it does not state what of the donor and acceptor is being compared. It is unknown if the ratio is for weight, volume, mass, a combination of those (i.e. acceptor weight to donor volume) or some other measurement. Claims 28, 33, 34, and 39-41 are indefinite by dependence.

### ***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claim 42 is rejected under 35 U.S.C. 102(e) as being anticipated by Liao et al. (US 2005/026174 A1).

Regarding claim 42, Liao et al. disclose an organic electroluminescent device comprising between an anode and a cathode at least two light-emitting layers with an

intermediate connector (intermediate electrode) in between [0032]. The reference discloses the intermediate connector comprises a low work function metal layer and a metal compound layer [0042]. The low work function metal layer is preferably Li, Na, Cs, Ca, or Ba [0046]. The metal compound layer is  $\text{MoO}_3$  [0049].

### ***Response to Arguments***

12. Applicant's arguments filed 30 December 2010 have been fully considered.

Regarding amended claim 1, arguments regarding the ratio are not commensurate with the scope of the claim. The specification supports the ratio of donor to acceptor by weight as cited by the arguments however the specification does not support other ratios such as by volume or by mole. Therefore the specification is unable to support the whole scope of the amended claim. The closest prior art, Tanaka et al. (US 6,107,734) and Liao et al. (US 6,717,358 B1), does not appear to teach or suggest an intermediate electrode as claimed with the specific metal oxide and donor materials with the specific weight ratios.

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL H. WILSON whose telephone number is (571)270-3882. The examiner can normally be reached on Monday - Thursday 7:30-5:00 (EST), Friday 7:30-4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/  
Supervisory Patent Examiner, Art Unit 1786

MHW